Claims

What is claimed is:

1. A method of managing the allocation of space on storage devices of a computing environment, said method comprising:

> obtaining one or more weights for one or more storage devices of said computing environment; and
>
> allocating space on at least one storage device of said one or more storage devices in proportion to at least one weight obtained for the at least one storage device, wherein said allocating is performed by a plurality of file systems of said computing environment.

2. The method of claim 1, wherein each of said plurality of file systems is located on a separate node of said computing environment.

3. The method of claim 1, wherein said plurality of file systems are located on one or more nodes of said computing environment.

4. The method of claim 1, wherein said allocating comprises executing an allocation technique by each file system of said plurality of file systems, wherein at least one file system of said plurality of file systems is running a different allocation technique than at least one other file system of said plurality of file systems.

5. The method of claim 1, wherein each storage device of said at least one storage device is partitioned into a plurality of partitions, and wherein one or more partitions of each storage device are owned by one or more file systems of said plurality of file systems.

6. The method of claim 1, wherein said allocating comprises allocating space on a plurality of storage devices by a plurality of file systems, wherein each file system of said plurality of file systems allocates space on one or more storage devices of said plurality of storage devices.

7. The method of claim 1, wherein said obtaining comprises using at least an allocation manager to obtain said one or more weights.

8. The method of claim 7, wherein said using comprises using said allocation manager and at least one node of said computing environment to obtain said one or more weights.

9. The method of claim 1, wherein said one or more weights represent at least one parameter of said computing environment.

10. The method of claim 1, wherein said allocating is independent of the obtaining of said one or more weights, wherein the allocating need not have knowledge of at least one of what the weights represent and how the weights were obtained.

11. The method of claim 1, wherein at least one storage device of said one or more storage devices has one or more different characteristics than at least one other storage device of said one or more storage devices.

12. The method of claim 1, further comprising propagating the at least one weight to at least one file system of said plurality of file systems.

13. The method of claim 1, further comprising:

tracking changes associated with at least one weight of said one or more weights;

adjusting said at least one weight based on the tracked changes; and

propagating the at least one adjusted weight to a file system of said computing environment, wherein said at least one adjusted weight is usable in allocating space on at least one storage device.

14. The method of claim 13, wherein said tracking is performed by the file system.

15. The method of claim 13, wherein said tracking is performed by a plurality of file systems, and wherein said propagating comprises propagating the at least one adjusted weight to the plurality of file systems that performed the tracking.

16. The method of claim 13, further comprising informing an allocation manager, at a predefined event, of the tracked changes, and wherein said allocation manager performs the adjusting and the propagating.

17. The method of claim 1, further comprising informing said plurality of file systems of changes in said at least one weight, wherein said changes are usable in further allocating space.

18. The method of claim 1, further comprising adjusting at least one weight of said one or more weights, in response to a failure of a file system of said computing environment.

19. The method of claim 18, wherein said adjusting comprises at least one of:

using information provided by at least one other file system of said computing environment to adjust said at least one weight; and

using information obtained from reading at least one storage device associated with said at least one weight to adjust said at least one weight.

20. The method of claim 1, further comprising maintaining at least one weight of said one or more weights, in response to a failure of a file system of said computing environment.

21. The method of claim 1, wherein one file system of said plurality of file systems allocates space on said at least one storage device for a given file, and wherein said allocating for that given file is based on an allocation policy that uses said at least one weight.

22. The method of claim 21, wherein said one file system allocates space on one or more storage devices for another file, and wherein the allocating for that another file is based on another allocation policy that uses one or more weights associated with the one or more storage devices.

23. A method of managing the allocation of space on storage devices of a computing environment, said method comprising:

obtaining a weight for each storage device of at least a subset of storage devices of a plurality of storage devices of said computing environment; and

allocating space on each storage device of said at least a subset of storage devices in proportion to the weight assigned to the storage device, wherein said allocating is performed by a plurality of file systems, such that each file system of said plurality of file systems allocates space on one or more storage devices of said at least said subset of storage devices.

24. A system of managing the allocation of space on storage devices of a computing environment, said system comprising:

means for obtaining one or more weights for one or more storage devices of said computing environment; and

means for allocating space, by a plurality of file systems of said computing environment, on at least one storage device of said one or more storage devices in proportion to at least one weight obtained for the at least one storage device.

25. The system of claim 24, wherein each of said plurality of file systems is located on a separate node of said computing environment.

26. The system of claim 24, wherein said plurality of file systems are located on one or more nodes of said computing environment.

27. The system of claim 24, wherein said means for allocating comprises means for executing an allocation technique by each file system of said plurality of file systems, wherein at least one file system of said plurality of file systems is running a different allocation technique than at least one other file system of said plurality of file systems.

28. The system of claim 24, wherein each storage device of said at least one storage device is partitioned into a plurality of partitions, and wherein one or more partitions of each storage device are owned by one or more file systems of said plurality of file systems.

29. The system of claim 24, wherein said means for allocating comprises means for allocating space on a plurality of storage devices by a plurality of file systems, wherein each file system of said plurality of file systems allocates space on one or more storage devices of said plurality of storage devices.

30. The system of claim 24, wherein said means for obtaining comprises means for using at least an allocation manager to obtain said one or more weights.

31. The system of claim 30, wherein said means for using comprises means for using said allocation manager and at least one node of said computing environment to obtain said one or more weights.

32. The system of claim 24, wherein said one or more weights represent at least one parameter of said computing environment.

33. The system of claim 24, wherein said means for allocating is independent of the means of obtaining of said one or more weights, wherein the means for allocating need not have knowledge of at least one of what the weights represent and how the weights were obtained.

34. The system of claim 24, wherein at least one storage device of said one or more storage devices has one or more different characteristics than at least one other storage device of said one or more storage devices.

35. The system of claim 24, further comprising means for propagating the at least one weight to at least one file system of said plurality of file systems.

36. The system of claim 24, further comprising:

means for tracking changes associated with at least one weight of said one or more weights;

means for adjusting said at least one weight based on the tracked changes; and

means for propagating the at least one adjusted weight to a file system of said computing environment, wherein said at least one adjusted weight is usable in allocating space on at least one storage device.

37. The system of claim 36, wherein said means for tracking comprises means for tracking by the file system.

38. The system of claim 36, wherein said means for tracking comprises means for tracking by a plurality of file systems, and wherein said means for propagating comprises means for propagating the at least one adjusted weight to the plurality of file systems used in the tracking.

39. The system of claim 36, further comprising means for informing an allocation manager, at a predefined event, of the tracked changes, and wherein said allocation manager performs the adjusting and the propagating.

40. The system of claim 24, further comprising means for informing said plurality of file systems of changes in said at least one weight, wherein said changes are usable in further allocating space.

41. The system of claim 24, further comprising means for adjusting at least one weight of said one or more weights, in response to a failure of a file system of said computing environment.

42. The system of claim 41, wherein said means for adjusting comprises at least one of:

means for using information provided by at least one other file system of said computing environment to adjust said at least one weight; and

means for using information obtained from reading at least one storage device associated with said at least one weight to adjust said at least one weight.

43. The system of claim 24, further comprising means for maintaining at least one weight of said one or more weights, in response to a failure of a file system of said computing environment.

44. The system of claim 24, wherein one file system of said plurality of file systems allocates space on said at least one storage device for a given file, and wherein the allocating for that given file is based on an allocation policy that uses said at least one weight.

45. The system of claim 44, wherein said one file system allocates space on one or more storage devices for another file, and wherein the allocating for that another file is based on another allocation policy that uses one or more weights associated with the one or more storage devices.

46. A system of managing the allocation of space on storage devices of a computing environment, said system comprising:

means for obtaining a weight for each storage device of at least a subset of storage devices of a plurality of storage devices of said computing environment; and

a plurality of file systems adapted to allocate space on each storage device of said at least a subset of storage devices in proportion to the weight assigned to the storage device, wherein each file system of said plurality of file systems allocates space on one or more storage devices of said at least said subset of storage devices.

47. A system of managing the allocation of space on storage devices of a computing environment, said system comprising:

at least one node adapted to obtain one or more weights for one or more storage devices of said computing environment; and

a plurality of nodes adapted to allocate space on at least one storage device of said one or more storage devices in proportion to at least one weight obtained for the at least one storage device.

48. The system of claim 47, wherein said plurality of nodes comprise said at least one node.

49. At least one program storage device readable by a machine, tangibly embodying at least one program of instructions executable by the machine to perform a method of managing the allocation of space on storage devices of a computing environment, said method comprising:

obtaining one or more weights for one or more storage devices of said computing environment; and

allocating space on at least one storage device of said one or more storage devices in proportion to at least one weight obtained for the at least one storage device, wherein said allocating is performed by a plurality of file systems of said computing environment.

50. The at least one program storage device of claim 49, wherein each of said plurality of file systems is located on a separate node of said computing environment.

51. The at least one program storage device of claim 49, wherein said plurality of file systems are located on one or more nodes of said computing environment.

52. The at least one program storage device of claim 49, wherein said allocating comprises executing an allocation technique by each file system of said plurality of file systems, wherein at least one file system of said plurality of file systems is running a different allocation technique than at least one other file system of said plurality of file systems.

53. The at least one program storage device of claim 49, wherein each storage device of said at least one storage device is partitioned into a plurality of partitions, and wherein one or more partitions of each storage device are owned by one or more file systems of said plurality of file systems.

54. The at least one program storage device of claim 49, wherein said allocating comprises allocating space on a plurality of storage devices by a plurality of file systems, wherein each file system of said plurality of file systems allocates space on one or more storage devices of said plurality of storage devices.

55. The at least one program storage device of claim 49, wherein said obtaining comprises using at least an allocation manager to obtain said one or more weights.

56. The at least one program storage device of claim 55, wherein said using comprises using said allocation manager and at least one node of said computing environment to obtain said one or more weights.

57. The at least one program storage device of claim 49, wherein said one or more weights represent at least one parameter of said computing environment.

58. The at least one program storage device of claim 49, wherein said allocating is independent of the obtaining of said one or more weights, wherein the allocating need not have knowledge of at least one of what the weights represent and how the weights were obtained.

59. The at least one program storage device of claim 49, wherein at least one storage device of said one or more storage devices has one or more different characteristics than at least one other storage device of said one or more storage devices.

60. The at least one program storage device of claim 49, wherein said method further comprises propagating the at least one weight to at least one file system of said plurality of file systems.

61. The at least one program storage device of claim 49, wherein said method further comprises:

tracking changes associated with at least one weight of said one or more weights;

adjusting said at least one weight based on the tracked changes; and

propagating the at least one adjusted weight to a file system of said computing environment, wherein said at least one adjusted weight is usable in allocating space on at least one storage device.

62. The at least one program storage device of claim 61, wherein said tracking is performed by the file system.

63. The at least one program storage device of claim 61, wherein said tracking is performed by a plurality of file systems, and wherein said propagating comprises propagating the at least one adjusted weight to the plurality of file systems that performed the tracking.

64. The at least one program storage device of claim 61, wherein said method further comprises informing an allocation manager, at a predefined event, of the tracked changes, and wherein said allocation manager performs the adjusting and the propagating.

65. The at least one program storage device of claim 49, wherein said method further comprises informing said plurality of file systems of changes in said at least one weight, wherein said changes are usable in further allocating space.

66. The at least one program storage device of claim 49, wherein said method further comprises adjusting at least one weight of said one or more weights, in response to a failure of a file system of said computing environment.

67. The at least one program storage device of claim 66, wherein said adjusting comprises at least one of:

using information provided by at least one other file system of said computing environment to adjust said at least one weight; and

using information obtained from reading at least one storage device associated with said at least one weight to adjust said at least one weight.

68. The at least one program storage device of claim 49, wherein said method further comprises maintaining at least one weight of said one or more weights, in response to a failure of a file system of said computing environment.

69. The at least one program storage device of claim 49, wherein one file system of said plurality of file systems allocates space on said at least one storage device for a given file, and wherein the allocating for that given file is based on an allocation policy that uses said at least one weight.

70. The at least one program storage device of claim 69, wherein said one file system allocates space on one or more storage devices for another file, and wherein the allocating for that another file is based on another allocation policy that uses one or more weights associated with the one or more storage devices.

71. At least one program storage device readable by a machine, tangibly embodying at least one program of instructions executable by the machine to perform a method of managing the allocation of space on storage devices of a computing environment, said method comprising:

obtaining a weight for each storage device of at least a subset of storage devices of a plurality of storage devices of said computing environment; and

allocating space on each storage device of said at least a subset of storage devices in proportion to the weight assigned to the storage device, wherein said allocating is performed by a plurality of file systems, such that each file system of said plurality of file systems allocates space on one or more storage devices of said at least said subset of storage devices.

* * * * *